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AUTHOR	Garrett, Anne C.; Kozak, Betty Ann
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ABSTRACT

This activity, the fifth in a set of elementary teacher-developed units for geography, is intended to help teachers in developing an ecological unit. It examines pollution problems in the United States through observation and inquiry. An environmental walk activity is outlined that can be performed in any area near a school. It provides an opportunity for students to examine and evaluate data, hypothesize about collected data, and draw conclusions. Teachers are recommended to contact their local park authorities for more materials. A bibliography of free or inexpensive materials on pollution is provided along with an exemplary map available from "The Washington Post" for free. See SO 009 140 for a general description and explanation of the elementary and secondary sets comprising this series. (ND)

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INSTRUCTIONAL ACTIVITIES SERIES IA/E-5

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OUR CROWDED, DIRTY WORLD:

THE DEVELOPMENT OF OUR ENVIRONMENTAL CRISIS AND ITS IMPACT UPON ONE'S HABITAT

by

Anne C. Garrett
Fairfax County School, Fairfax, Virginia

Betty Ann Kozak
Prince George County Schools, Upper Marlboro, Maryland

Pollution in America: When did it begin? What causes pollution? What evidence is there of man's misusing his environment? What are the repercussions of man's altering his habitat? Is all pollution man-made? Can laws correct pollution problems? These and other questions will be explored in this activity.

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Our Crowded, Dirty World, is intended to help teachers in developing an ecological unit. The enclosed materials are offered to assist in establishing such a unit.

The suggested environmental walk can be applied to any school area. This experience provides opportunities for the student to examine and evaluate data, hypothesize with regard to collected data, and draw conclusions on the basis of evidence presented. It is recommended that teachers contact their local park authority for more materials.

Dittoes of the map showing pollution in our capital and a wealth of other information can be obtained free from the Washington Post Public Relations Department.

The brief bibliography will enable teachers to obtain free and inexpensive materials on pollution.

ENVIRONMENTAL WALK ACTIVITY

Student Guide

I. Air Pollution

A. Does the air smell clean?
Yes_____ No_____

B. As you walk about the school check all the sources of air pollution.

_____factories	_____buses
_____homes	_____dump trucks
_____automobiles	_____airplanes
_____incinerators	_____open fires
_____garbage cans	_____people (cigarettes)
_____other	

C. Collect some pollutants

a. Hang vaseline coated cards or pieces of cheesecloth in different locations and in different weather. Compare the particulates trapped on a sunny day, foggy day, windy day, etc.

b. At a tree near a bus stop wipe a leaf with a tissue
Wipe a leaf of a tree away from the street and traffic
Compare tissues

c. Look for a car that shows signs of rust. How old is the car?
Find a car that shows no evidence of rust. How old is that car?
Compare

d. Sandpaper a small part of the stone on the outside of the school. Is there a difference in color?

e. Is one part of the outside of the school building dirtier than another part?
_____yes _____no
Why?_____

II. Noise Pollution

Listen to the sounds around the school.
Make a list of the sounds
Which ones could be listed as:

_____very noisy	_____moderate
_____noisy	_____quiet

III. Land Pollution

A. Litter
Collect litter around the school

B. Erosion
List the evidence of soil erosion around your school; find out what the cause of it is and what can be done to prevent it.

C. The process of plant photosynthesis adds oxygen to the air. Could the grounds around the school use more plants and trees?

IV. Man's Effect
- A. What evidence is there that man has changed this environment?
- B. What kinds of wildlife do you see or have you seen?
- C. Was the change good? (value- judgment.)

V. Suggested Follow-up Activities
- A. Illustrations of what the environment would look like if man had not changed it.
- B. Cartoons showing man's effect on his environment.
- C. Make creatures out of collected litter.
- D. Make a graph showing levels of noise pollution.
- E. Make comparison maps of before and after man.
- F. Dramatization of man's effect on wildlife.

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Washington Post. "News Map," Ditto Master, August 13, 1967.

Washington Post. "Pollution...An Exaggerated View?" Filmstrip, 1970.

Note: All of the above items with the exception of the film "Boomsville" can be obtained free.

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*Fairfax County Park Authority. Kit on Conservation and Environmental Education. Annandale, Virginia: 1970. Materials include bibliographies, field trip suggestions, suggestions on what a citizen can do about the environmental crisis. Call Mr. Aldrich at FCPA, 941-5009

*Contact local park authorities.

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National Audubon Society. A Place to Live. New York: 1970. This paperback is a workbook for third and fourth graders on urban ecology. Activities involve writing or drawing in the book as well as group activities. Teacher's Manual $1.50; student manual, $ .75. The National Audubon Society, 1130 Fifth Avenue, New York, New York 10028.

National Education Association. Man and His Environment: An Introduction to Using Environmental Study Areas. Washington, D. C.: NEA, 1970 ($1.75)

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Science and Children. Magazine for Teachers.

Science Digest. Magazine for students.

Virginia Water Control Board. Water Pollution Kit. Richmond: Commonwealth of Virginia, 1970
This kit is free upon request. Write State Water Control Board, P. O. Box 11143, 4010 West Broad Street, Richmond, Virginia 23230

Vivian, Eugene V., Henderson, E. L., et al. "Environmental Education", Instructor, LXXX (January, 1971), pp. 52-61.
This article features a variety of activities of use for this unit.

Other sources of material on environmental problems include:

Environmental Science Services Administration
Department of Commerce
Rockville, Maryland 20852

National Center for Air Pollution Control
U.S. Public Health Service
Washington, D. C. 20201

U.S. Department of Interior
Federal Water Pollution Control Administration
633 Indiana Avenue, N.W.
Washington, D. C. 20242

National Council for Air and Stream Improvement
103 Park Avenue
New York, N. Y. 10026

The American Institute of Plant Engineers Industrial Pollution Committee
1056 Delta Avenue
Cincinnati, Ohio 45208

American Public Health Association
1704 Broadway
New York, N. Y. 10019

Air Pollution Control Association
4400 Fifth Avenue
Pittsburgh, Pa. 15213

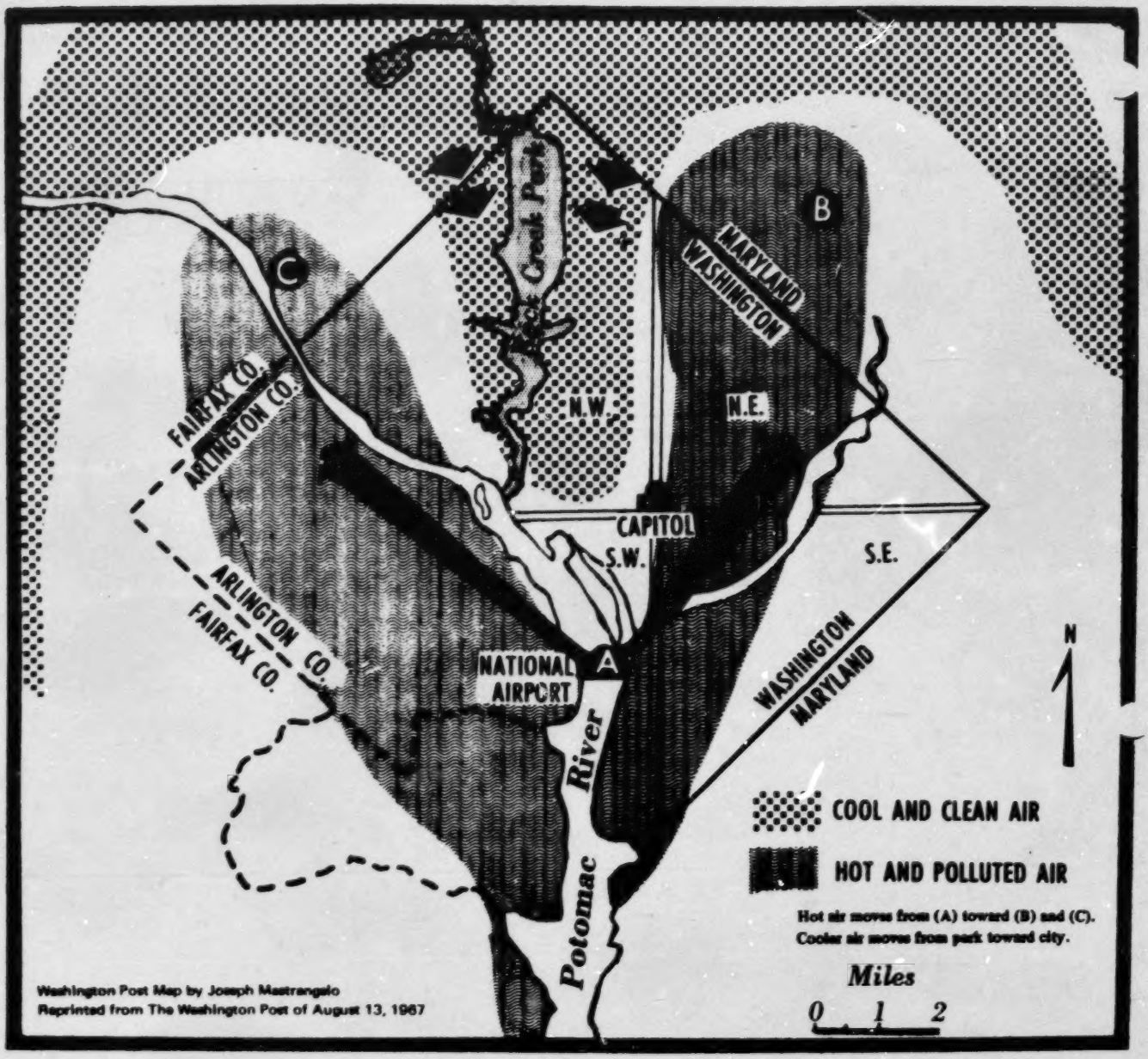
Citizens for Clean Air
Box One Million, Grand Central Station
New York, N. Y. 10017

The Conservation Foundation
1250 Connecticut Avenue N.W.
Washington, D. C. 20036

National Wildlife Federation
1412 16th Street N.W.
Washington, D. C. 20036

Tennessee Valley Authority
Director of Information
Knoxville, Tennessee 37902

Water Pollution Control Federation
3900 Wisconsin Avenue, N.W.
Washington, D. C. 20016



SUMMER "HEAT ISLAND" SENDS AIR POLLUTION INTO SUBURBS

Almost daily, the center of the hot air mass divides and flows into the suburbs, according to a U.S. Weather Bureau research specialist.

Clarence A. Woollum calls the mass the "urban heat island." In it are sulphur dioxide, carbon monoxide and other pollutants common to the city's atmosphere. Woollum has compiled data on the movement of the urban heat island for the past nine years.

Measurements taken last month show a typical daily movement of the polluted air.

Each July morning at 5 o'clock, the air mass centered over National Airport, where the minimum temperature averaged 68 degrees, the hottest in the city.

With temperatures rising through the morning, the island split and began its two-pronged march into the suburbs.

By 3 P.M. the island encompassed a large "vee" from Glen Echo to National Airport to College Park. At the same time, a sweeping wave of cooler, less polluted air poured into the city along the green strip of Rock Creek Park. The temperature of this air was about six degrees cooler than the air in the heat island.

According to Woollum, the movement of cool air aids in pushing the heat island away from the city.

Greater understanding of the movement of the urban heat island will aid in designing more effective air pollution control programs, Woollum believes.

(The Washington Post, 8/13/67)

The Washington Post NEWS MAP